What is claimed:

1. A flow cell for photometric analysis comprising:

a flow channel having a proximal end and a distal end;

an inlet channel and an outlet channel in fluid communication with said flow channel;

an excitation lens positioned within the proximal end of said flow channel;

a retro-reflecting mirrored lens positioned at the distal end of said flow channel;

an emissions window positioned substantially parallel to the long axis of said flow channel; and

a reflective surface positioned opposite said emissions window.

2. The flow cell of claim 1 wherein said excitation lens allows for an excitation beam to travel axially through said flow channel.

3. The flow cell of claim 2 wherein said retro-reflecting mirrored lens reflects said excitation beam back through said flow channel.

4. The flow cell of claim 2 wherein said retro-reflecting mirrored lens reflects said excitation beam back through said flow channel multiple times.

5. The flow cell of claim 4 wherein said reflective surface opposite said emission window directs additional fluorescence out said emission window.

6. The flow cell of claim 1 wherein said flow channel has a volume of between 0.5 and 15 μL.

7. The flow cell of claim 6 wherein said flow channel has a volume of between 8 and 9.5μL.

8. The flow cell of claim 6 wherein said flow channel has a volume of between 0.75 and 1.25μL

9. The flow cell of claim 2 wherein said excitation beam is delivered to said flow channel from an excitation monchromator having optics in a first plane.

10. The flow cell of claim 5 wherein said fluorescence is delivered to an emission monchromator having optics in a second plane perpendicular to said first plane.

11. A method for measuring fluorescence from a liquid sample comprising:

passing said liquid sample through a flow channel;

directing an excitation beam axially through said flow channel;

retro-reflecting said excitation beam back through said flow channel, both excitation passes generating fluorescence;

emitting said fluorescence through an emission window substantially parallel to a long axis of the flow channel; and

detecting fluorescence from said sample liquid.

12. The method of claim 11 wherein said excitation beam is produced from a light source selected from the set consisting of a Xenon arc, a Xenon/Mercury arc, a Deuterium arc and a Tungsten Halogen lamp.

13. The method of claim 12 wherein said excitation beam is produced from a Xenon arc.

14 The method of claim 11 wherein said excitation beam is produced from excitation optics in a first plane.

15. The method of claim 14 wherein said fluorescent is directed to a detector by emission optics that are in a second plane perpendicular to said first plane.

16. A method of constructing a flow cell, comprising:

forming plates of various dimensions of clear quartz and black quartz;

assembling said plates, wherein said various dimensions form a flow channel having an inlet port and an outlet port;

fusing said plates to each other; and

fusing lenses to both ends of assembled plates.

17. A flow cell for photometric analysis comprising:

a cell body;

a flow channel formed in said body having an input means and an output means;

a light input means positioned axially to said cell body where said light input means and said cell body are within a first plane;

a light source means for emitting an excitation beam of a predetermined wavelength, wherein said excitation beam flows axially through said flow channel producing fluorescence;

a means for retro-reflecting said excitation beam back through said flow channel;

a light output means positioned substantially parallel to a long axis of the flow channel and to said first plane of said cell body;

a means for reflecting said fluorescence toward said light output means; and

a light detector means positioned contiguous to said light output means.

18. The flow cell according to claim 17, wherein said light source means is selected from the set consisting of a Xenon arc, a Xenon/Mercury arc, a Deuterium arc and a Tungsten Halogen lamp.

19. The flow cell according to claim 18, wherein said light source means comprises a Xenon arc.

20. The flow cell according to claim 17, wherein said means for retro-reflecting said excitation beam comprises a mirrored optical lens positioned within said flow channel opposite said light input means.

21. The flow cell according to claim 17, wherein said means for reflecting said fluorescence comprises a mirrored surface opposite said light output means.

22. The flow cell according to claim 17, wherein said light output means comprises a transparent window.

23. The flow cell according to claim 17 wherein said light input means comprises an optical excitation lens.

24. The flow cell according to claim 17 wherein said cell body comprises plates of various dimensions being formed from clear quartz and black quartz.

25. The flow cell according to claim 17 wherein said retro-reflecting means comprises coating the back of an optical lens with evaporated metal chosen from the set consisting of aluminum, silver, and gold.

26. The flow cell according to claim 25 wherein said evaporated metal is aluminum.

27. The flow cell according to claim 17 wherein said reflecting means for reflecting said fluorescence comprises coating a surface of a clear quartz plate surface with evaporated metal chosen from the set consisting of aluminum, silver, and gold.

28. The flow cell according to claim 27 wherein said evaporated metal is aluminum.

29. The method of claim 15 wherein said first plane is a horizontal plane and said second plane is a vertical plane.